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Chemistry

Time Remaining: 45/45 (Minutes)

Q.1

Test 2 Atomic Structure

Chemistry Unit Wise

The total number of electrons in a shell are calculated by:

a. $2(n)$ c. $2 \times X$ b. $(n)^2$ d. $2(n)^2$

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Correct Answer:



A



B



C



D

Next



Time Remaining: 44/45 (Minutes)

Q.2

Test 2 Atomic Structure

Chemistry Unit Wise

If the value of $l = 3$ then the electron is located in _____ shell?

- a. K b. M
c. N d. L

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Correct Answer:

- ☒ A ☐ B ☐ C ☐ D

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**Time Remaining: 44/45 (Minutes)****Q.3****Test 2 Atomic Structure****Chemistry Unit Wise**

After filling d orbitals the next electrons will enter into _____ orbital:

a. s

b. p

c. d

d. f

STAR INSTITUTE LAHORE[Click Here if Image Doesn't Load](#)**Correct Answer:**

A



B



C



D

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**Time Remaining: 44/45 (Minutes)****Q.4****Test 2 Atomic Structure****Chemistry Unit Wise**

An element form M^{+3} ion and belong to 3rd period of periodic table the number of protons in its nucleus are?

a. 31

b. 15

c. 13

d. 11

STAR INSTITUTE LAHORE[Click Here if Image Doesn't Load](#)**Correct Answer:**

A



B



C



D

Next**Back**



Time Remaining: 44/45 (Minutes)

Q.5

Test 2 Atomic Structure

Chemistry Unit Wise

According to Aufbu's principal the highest energy orbital will be filled:

- a. Immediately b. initially
c. in the end d. first

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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**Time Remaining: 44/45 (Minutes)****Q.6****Test 2 Atomic Structure****Chemistry Unit Wise****Lowest energy electron are present in:****a. s orbital****b. p orbital****c. d orbital****d. forbital****STAR INSTITUTE LAHORE**[Click Here if Image Doesn't Load](#)**Correct Answer:**☒ A ☐ B ☐ C ☐ D**Next****Back**

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**Time Remaining: 44/45 (Minutes)****Q.7****Test 2 Atomic Structure****Chemistry Unit Wise****The lightest particle in nucleus is?**

- a. Proton
- b. Electron
- c. Neutron
- d. All have same mass

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Time Remaining: 44/45 (Minutes)

Q.8

Test 2 Atomic Structure

Chemistry Unit Wise

All orbitals of a d-sub shell are represented with four lobes except:

a. d_{xy} b. $d_{x^2-y^2}$ c. d_{z^2} d. d_{xz}

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Correct Answer:



A



B



C



D

Next

Back



Time Remaining: 44/45 (Minutes)

Q.9

Test 2 Atomic Structure

Chemistry Unit Wise

The electrons should be filled in the order of increasing energy values is according to:

- a. Pauli Exclusion Principle
- b. Hund's rule
- c. Aufbau Principle
- d. Planck's quantum theory

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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15

**Time Remaining: 44/45 (Minutes)****Q.10****Test 2 Atomic Structure****Chemistry Unit Wise**

The ionization of an atom is:

- a. Always exothermic process
- b. May or may not be endothermic
- c. Always endothermic process
- d. May be exothermic or may be endothermic process

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Time Remaining: 43/45 (Minutes)

Q.11

Test 2 Atomic Structure

Chemistry Unit Wise

All of the following pairs are isoelectronic except

a. S^{-2} and K^{+} b. F^{-} and Nec. NO and N_2^{-} d. C_3H_8 and CO_2

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Correct Answer:



A



B



C



D

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**Time Remaining: 43/45 (Minutes)****Q.12****Test 2 Atomic Structure****Chemistry Unit Wise**

Alpha rays are actually

- a. 1 protons 2 neutrons
- b. 2 protons 2 electrons
- c. 2 protons 2 neutrons
- d. 2 protons 1 neutrons

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Time Remaining: 43/45 (Minutes)

Q.13

Test 2 Atomic Structure

Chemistry Unit Wise

Their e/m ratio resembles with that of electrons

- a. Alpha rays
- b. Beta rays
- c. Gamma rays
- d. X-rays

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Correct Answer:

☐ A ☐ B ☐ C ☐ D

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Time Remaining: 43/45 (Minutes)

Q.14

Test 2 Atomic Structure

Chemistry Unit Wise

The increasing penetration effect of atomic orbitals is:

a. $d < p < s < f$

b. $p < s < d < f$

c. $s < f < p < d$

d. $f < d < p < s$

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Correct Answer:



A



B



C



D

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15

**Time Remaining: 43/45 (Minutes)****Q.15****Test 2 Atomic Structure****Chemistry Unit Wise****Which have better penetrating power?**

- a. Alpha rays
- b. Beta rays
- c. Gamma rays
- d. X-rays

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Time Remaining: 43/45 (Minutes)

Q.16

Test 2 Atomic Structure

Chemistry Unit Wise

If $n = 3$, $l = 1$, $m = +1, 0, -1$ then orbital is:

a. 2s

b. 2p

c. 3p

d. 3d

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Correct Answer:



A



B



C



D

Next

Back



Time Remaining: 43/45 (Minutes)

Q.17

Test 2 Atomic Structure

Chemistry Unit Wise

The element shows two valency if there is sufficient gap between:

- a. Third ionization energy and fourth ionization energy
- b. First ionization energy and second ionization energy
- c. Second ionization energy and third ionization energy
- d. Fourth ionization energy and fifth ionization energy

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Correct Answer:

☐ A ☐ B ☐ C ☐ D

Next

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Time Remaining: 43/45 (Minutes)

Q.18

Test 2 Atomic Structure

Chemistry Unit Wise

If proton number of an element 'Z' is 37 then the total number of electron in its ion ' Z^{-2} ' is:

a. 37

b. 35

c. 39

d. 18

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Correct Answer:



A



B



C



D

Next

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**Time Remaining: 43/45 (Minutes)****Q.19****Test 2 Atomic Structure****Chemistry Unit Wise**

Which one of the following positive particles has maximum charge to mass ratio?

a. O^+ **b. Na^+** **c. K^+** **d. H^+** **STAR INSTITUTE LAHORE**[Click Here if Image Doesn't Load](#)**Correct Answer:****A****B****C****D****Next****Back**



Time Remaining: 43/45 (Minutes)

Q.20

Test 2 Atomic Structure

Chemistry Unit Wise

The charge one kilogram electron:

a. $1.602 \times 10^{-19} \text{ C}$

b. $1.75 \times 10^{11} \text{ C}$

c. 9.1×10^{-31}

d. 1.661×10^{-24}

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Correct Answer:



A



B



C



D

Next

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Time Remaining: 42/45 (Minutes)

Q.21

Test 2 Atomic Structure

Chemistry Unit Wise

The relative mass of an electron is?

a. 0

b. +1

c. 0.0005

d. -1

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Correct Answer:



A



B



C



D

Next

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15

**Time Remaining: 42/45 (Minutes)****Q.22****Test 2 Atomic Structure****Chemistry Unit Wise**

If the nucleon number for the same element is different then it refers to:

- a. difference of electron
- b. Isotopes
- c. difference of protons
- d. All of these

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**Time Remaining: 42/45 (Minutes)****Q.23****Test 2 Atomic Structure****Chemistry Unit Wise**

Sum of proton and neutrons in an atom is called its :

- a. isotope
- b. Atomic number
- c. Nucleon number
- a. *Atomic mass*

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15

**Time Remaining: 42/45 (Minutes)****Q.24****Test 2 Atomic Structure****Chemistry Unit Wise****Electronic configuration of K is:**a. $[\text{Ar}]4s^2$ b. $[\text{Ar}]4s^1$ c. $[\text{Kr}]5s^1$ d. $[\text{He}]2s^1$ **STAR INSTITUTE LAHORE**[Click Here if Image Doesn't Load](#)**Correct Answer:**

A



B



C



D

Next**Back**



Time Remaining: 42/45 (Minutes)

Q.25

Test 2 Atomic Structure

Chemistry Unit Wise

A set of orbitals having same value of 'l' is called:

a. Shell

b. Sub-shell

c. molecular orbital

d. Energy level

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Correct Answer:



A



B



C



D

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Time Remaining: 42/45 (Minutes)

Q.26

Test 2 Atomic Structure

Chemistry Unit Wise

Which one of the following rule is used to arrange the sub energy levels in increasing order of energy?

- a. Hund's rule
- b. $(n+l)$ rule
- c. Octet rule
- d. Auf bau principle

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Time Remaining: 42/45 (Minutes)

Q.27

Test 2 Atomic Structure

Chemistry Unit Wise

Which one is the heavier particle?

a. Electron

b. Proton

c. Neutron

d. Photon

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Correct Answer:



A



B



C



D

Next

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Time Remaining: 42/45 (Minutes)

Q.28

Test 2 Atomic Structure

Chemistry Unit Wise

The total relative charge of an element is equal to:

- a. Its charge of electrons
- b. Zero
- c. its Charge of protons
- d. None of these

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Correct Answer:

☐ A ☐ B ☐ C ☐ D

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Time Remaining: 42/45 (Minutes)

Q.29

Test 2 Atomic Structure

Chemistry Unit Wise

The mass of electron is

a. 1.6022×10^{-19} kgb. 1.6022×10^{-17} kgc. 9.1090×10^{-31} kg

d. None

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Correct Answer:

☐ A ☐ B ☐ C ☐ D

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Time Remaining: 41/45 (Minutes)

Q.30

Test 2 Atomic Structure

Chemistry Unit Wise

Which one of the following determines the position of an element in the Periodic Table?

- a. chemical reactivity
- b. first ionization energy
- c. number of electrons in outer orbital
- d. number of protons in the nucleus of its atom

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Correct Answer:

☐ A ☐ B ☐ C ☐ D

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Time Remaining: 41/45 (Minutes)

Q.31

Test 2 Atomic Structure

Chemistry Unit Wise

An element with $4p^4$ valence electronic configuration will have period and group no. in modern periodic table?

a. 4 and IV

b. 4 and III

c. 4 and VI

d. 4 and V

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Correct Answer:



A



B



C



D

Next

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Time Remaining: 41/45 (Minutes)

Q.32

Test 2 Atomic Structure

Chemistry Unit Wise

Which one of the following are Isosteres?

- a. H^{-1} and H
- b. N_2 and CO
- c. ${}_6\text{C}^{12}$ and ${}_8\text{O}^{16}$
- d. ${}_{18}\text{Ar}^{20}$ and ${}_{20}\text{Ca}^{40}$

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Correct Answer:

☐ A ☐ B ☐ C ☐ D

Next

Back



Time Remaining: 41/45 (Minutes)

Q.33

Test 2 Atomic Structure

Chemistry Unit Wise

Which orbital is bigger in size and have maximum energy?

a. 2px

b. 3px

c. 4px

d. 5px

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Correct Answer:



A



B



C



D

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Time Remaining: 41/45 (Minutes)

Q.34

Test 2 Atomic Structure

Chemistry Unit Wise

The ionic species having more electrons than neutrons is

a. Na^+ b. Mg^{+2} c. O^{-2} d. F^{-1}

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Correct Answer:

☐ A ☐ B ☐ C ☐ D

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Time Remaining: 41/45 (Minutes)

Q.35

Test 2 Atomic Structure

Chemistry Unit Wise

What kind of orbital must an electron with the principal quantum number $n=2$ occupy?

- a. a spherically-shaped orbital
- b. either an s or p orbital
- c. the orbital closest to the nucleus
- d. a dumb-bell-shaped orbital

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Correct Answer:

☐ A ☐ B ☐ C ☐ D

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Time Remaining: 41/45 (Minutes)

Q.36

Test 2 Atomic Structure

Chemistry Unit Wise

Which property is the same for the two nuclides $\frac{40}{18}\text{Ar}$ and $\frac{40}{19}\text{K}$?

- a. the number of electrons
- b. the number of neutrons
- c. the number of nucleons
- d. the number of protons

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Time Remaining: 41/45 (Minutes)

Q.37

Test 2 Atomic Structure

Chemistry Unit Wise

A spinning electron creates

a. magnetic field

b. electric field

c. quantum field

d. none

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Correct Answer:



A



B



C



D

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Time Remaining: 41/45 (Minutes)

Q.38

Test 2 Atomic Structure

Chemistry Unit Wise

Atomic number of an element is 17. The number of pairs of paired and also unpaired electrons in the valence shell of atom is :

a. 1, 3

b. 3, 1

c. 2, 2

d. 4, 1

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Correct Answer:



A



B




C



D

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**Time Remaining: 40/45 (Minutes)****Q.39****Test 2 Atomic Structure****Chemistry Unit Wise**

The correct set of quantum number for unpaired electron in sodium atom is:

- | | n | / | m |
|----|---|---|---|
| a. | 2 | 0 | 0 |
| b. | 3 | 0 | 0 |
| c. | 2 | 1 | 1 |
| d. | 3 | 0 | 1 |

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**Time Remaining: 40/45 (Minutes)****Q.40****Test 2 Atomic Structure****Chemistry Unit Wise**

The divisibility of atom was shown by

a. Stoney

b. J.J Thomson

c. Millikan

d. Rutherford

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Q. 1

The total number of electrons in a shell are calculated by:

a. $2(n)$

c. $2 \times X$

b. $(n)^2$

d. $2(n)^2$

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Q. 2

If the value of $l = 3$ then the electron is located in _____ shell?

a. K

b. M

c. N

d. L

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Q. 3

After filling d orbitals the next electrons will enter into _____ orbital:

a. s

b. p

c. d

d. f

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Electronic configuration

[Xe] 4f ¹⁴ 5d ¹⁰ 6s ²
[Xe] 4f ¹⁴ 5d ⁹ 6s ²
[Xe] 4f ¹⁴ 5d ⁸ 6s ²
[Xe] 4f ¹⁴ 5d ⁷ 6s ²
[Xe] 4f ¹⁴ 5d ⁶ 6s ²
[Xe] 4f ¹⁴ 5d ⁵ 6s ²
[Xe] 4f ¹⁴ 5d ⁴ 6s ²
[Xe] 4f ¹⁴ 5d ³ 6s ²
[Xe] 4f ¹⁴ 5d ² 6s ²
[Xe] 4f ¹⁴ 5d ¹ 6s ²
[Xe] 4f ¹⁴ 6s ²

of Lanthanoids

Zinc-65

2, 8, 18, 2

Electron Configurations

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1s²

2s²

2p⁶

3s²

3p⁶

3d¹⁰

4s²

4p⁶

4d¹⁰

4f¹⁴

5s²

5p⁶

5d¹⁰

5f¹⁴

6s²

6p⁶

6d¹⁰

6f¹⁴

7s²

7p⁶

7d¹⁰

7f¹⁴

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Q. 4

An element form M^{+3} ion and belong to 3rd period of periodic table the number of protons in its nucleus are?

a. 31

b. 15

c. 13

d. 11

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Q. 5

According to Aufbu's principal the highest energy orbital will be filled:

- a. Immediately
- b. initially
- c. in the end
- d. first

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Q. 6

Lowest energy electron are present in:

a. s orbital

b. *p orbital*

c. *d orbital*

d. *forbital*

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Q. 7

The lightest particle in nucleus is?

- a. Proton
- b. Electron
- c. Neutron
- d. All have same mass

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Q. 8

All orbitals of a d-sub shell are represented with four lobes except:

a. d_{xy} c. d_{z^2} b. $d_{x^2-y^2}$ d. d_{xz}

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Q. 9

The electrons should be filled in the order of increasing energy values is according to:

- a. Pauli Exclusion Principle
- b. Hund's rule
- c. Aufbau Principle**
- d. Planck's quantum theory

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Q. 10

The ionization of an atom is:

- a. Always exothermic process
- b. May or may not be endothermic
- c. Always endothermic process
- d. May be exothermic or may be endothermic process**

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Q. 11

All of the following pairs are isoelectronic except

a. S^{-2} and K^{+}

16+2 19-1

b. F^{-} and Ne

9+1 10

c. NO and N_2^{-}

7+8 7+7+1

d. C_3H_8 and CO_2

18+8 6+16

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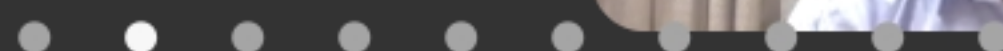


Q. 12

Alpha rays are actually

- a. 1 protons 2 neutrons
- b. 2 protons 2 electrons
- c. 2 protons 2 neutrons
- d. 2 protons 1 neutrons

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Q. 13

Their e/m ratio resembles with that of electrons

- a. Alpha rays
- b. Beta rays
- c. Gamma rays
- d. X-rays

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Q. 14

The increasing penetration effect of atomic orbitals is:

- a. $d < p < s < f$ b. $p < s < d < f$
c. $s < f < p < d$ d. $f < d < p < s$

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Q. 15

Which have better penetrating power?

- a. Alpha rays
- b. Beta rays
- c. Gamma rays
- d. X-rays

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Q. 16

If $n = 3$, $l = 1$, $m = +1, 0, -1$ then orbital is:

a. 2s

b. 2p

c. 3p

d. 3d

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Q. 17

The element shows two valency if there is sufficient gap between:

- a. Third ionization energy and fourth ionization energy
- b. First ionization energy and second ionization energy
- c. **Second ionization energy and third ionization energy**
- d. Fourth ionization energy and fifth ionization energy

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Q. 18

If proton number of an element 'Z' is 37 then the total number of electron in its ion ' Z^{-2} ' is:

a. 37

b. 35

c. 39

d. 18

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Q. 19

Which one of the following positive particles has maximum charge to mass ratio?

a. O^+ b. Na^+ c. K^+ d. H^+

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Q. 20

The charge one kilogram electron:

- a. $1.602 \times 10^{-19} \text{ C}$ b. $1.75 \times 10^{11} \text{ C}$
c. 9.1×10^{-31} d. 1.661×10^{-24}

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Q. 21

The relative mass of an electron is?

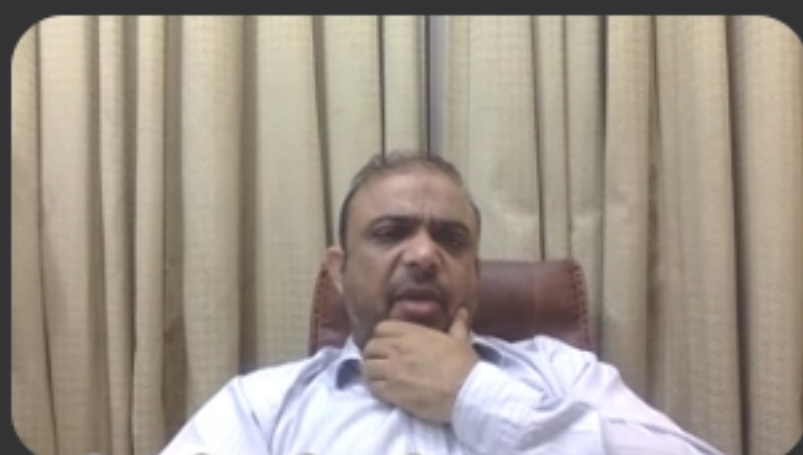
a. 0

c. 0.0005

b. +1

d. -1

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Q. 22

If the nucleon number for the same element is different then it refers to:

- a. difference of electron
- b. Isotopes**
- c. difference of protons
- d. All of these

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Q. 23

Sum of proton and neutrons in an atom is called its :

- a. isotope
- b. Atomic number
- c. Nucleon number**
- a. Atomic mass

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Q. 24

Electronic configuration of K is:

a. $[\text{Ar}]4s^2$

b. $[\text{Ar}]4s^1$

c. $[\text{Kr}]5s^1$

d. $[\text{He}]2s^1$

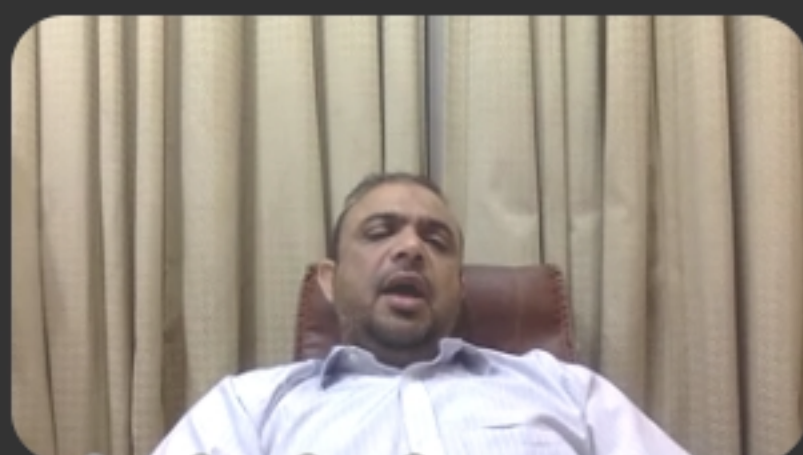
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Q. 25

A set of orbitals having same value of 'l' is called:

- a. Shell
- b. Sub-shell
- c. molecular orbital
- d. Energy level

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Q. 26

Which one of the following rule is used to arrange the sub energy levels in increasing order of energy?

- a. Hund's rule
- b. $(n+l)$ rule
- c. Octet rule
- d. Auf bau principle

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Q. 27

Which one is the heavier particle?

a. Electron

b. Proton

c. Neutron

d. Photon

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Q. 28

The total relative charge of an element is equal to:

- a. Its charge of electrons
- b. Zero**
- c. its Charge of protons
- d. None of these

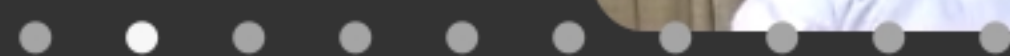
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Q. 29

The mass of electron is

- a. 1.6022×10^{-19} kg
- b. 1.6022×10^{-17} kg
- c. 9.1090×10^{-31} kg
- d. None

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Q. 30

Which one of the following determines the position of an element in the Periodic Table?

- a. chemical reactivity
- b. first ionization energy
- c. number of electrons in outer orbital**
- d. number of protons in the nucleus of its atom

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Q. 31

An element with $4p^4$ valence electronic configuration will have period and group no. in modern periodic table?

a. 4 and IV

b. 4 and III

c. 4 and VI

d. 4 and V

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Q. 32

Which one of the following are Isosteres?

a. H^{-1} and H

b. N_2 and CO

c. ${}_6\text{C}^{12}$ and ${}_8\text{O}^{16}$

d. ${}_{18}\text{Ar}^{20}$ and ${}_{20}\text{Ca}^{40}$

Isosteres: one of two or more substances (as carbon monoxide and molecular nitrogen) that exhibit similarity of some properties as a result of having the same number of total or valence electrons in the same arrangement and that consist of different atoms and not necessarily the same number of atoms

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Q. 33

Which orbital is bigger in size and have maximum energy?

a. 2px

b. 3px

c. 4px

d. 5px

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Q. 34

The ionic species having more electrons than neutrons is

a. Na^+ b. Mg^{+2} c. O^{-2} d. F^{-1}

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Q. 35

What kind of orbital must an electron with the principal quantum number $n=2$ occupy?

- a. a spherically –shaped orbital
- b. either an s or p orbital**
- c. the orbital closest to the nucleus
- d. a dumb-bell-shaped orbital

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Q. 36

Which property is the same for the two
nuclides $\frac{40}{18}\text{Ar}$ and $\frac{40}{19}\text{K}$?

- a. the number of electrons
- b. the number of neutrons
- c. the number of nucleons**
- d. the number of protons

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Q. 37

A spinning electron creates

- a. magnetic field
- b. electric field
- c. quantum field
- d. none

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Q. 38

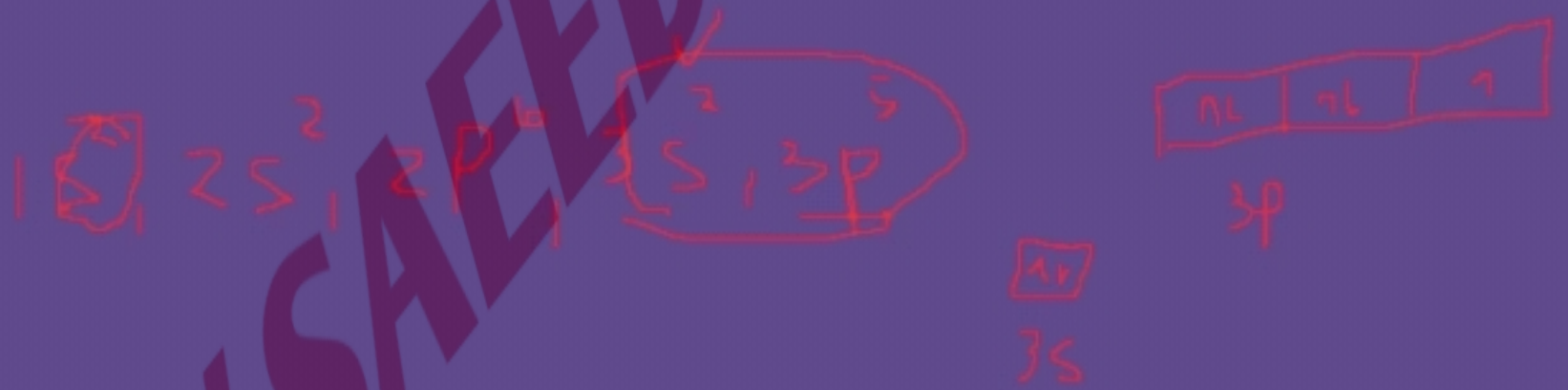
Atomic number of an element is 17. The number of pairs of paired and also unpaired electrons in the valence shell of atom is :

a. 1, 3

b. 3, 1

c. 2, 2

d. 4, 1



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سید اختر عباس جعفری screen's

Q. 39

The correct set of quantum number for unpaired electron in sodium atom is:

- | | n | l | m |
|----|----------|----------|--------------|
| a. | 2 | 0 | 0 |
| b. | <u>3</u> | <u>0</u> | <u>0</u> |
| c. | 2 | 1 | 1 |
| d. | <u>3</u> | <u>0</u> | 1 |

3s

$m = \pm 1$

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Q. 40

The divisibility of atom was shown by

- a. Stoney
- b. J.J Thomson
- c. Millikan
- d. Rutherford

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